



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,884	02/17/2004	Bradley Joseph Dewispelaere	DP-310280	9637

7590 10/10/2007
PATRICK M. GRIFFIN
DELPHI TECHNOLOGIES, INC.
Legal Staff. Mail Code: 480-410-202
P.O. Box 5052
Troy, MI 48007-5052

EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT	PAPER NUMBER
----------	--------------

3746

MAIL DATE	DELIVERY MODE
-----------	---------------

10/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/779,884

Applicant(s)

DEWISPELAERE ET AL.

Examiner

Peter J. Bertheaud

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Request for Continued Examination 8/22/2007. It is noted that claim 1 has been amended and claims 2 and 8 have been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner 4,428,718 in view of Ota 6,629,823.

Skinner discloses a variable displacement compressor comprising: a drive shaft 26 extending along a longitudinal axis, having a first end (end of 26 on right side of Fig. 1) and a second end (end on left side of Fig. 1); a swash plate assembly 50 operatively connected to and driven by said drive shaft; a retainer ring 32 for disposition about said drive shaft, and said drive shaft further having a first annular groove (groove inside 32) between said second end and said swash plate assembly; and a second annular groove (groove that contains spring 107) between said first annular groove and said swash plate assembly; wherein each of said first and second annular groove includes a side that is substantially perpendicular to said longitudinal axis and facing said swash plate assembly (see the left sides of both grooves in Fig. 1). Skinner also discloses that a

Art Unit: 3746

conical ramp (see ramp extending from 32) extends out of said first annular groove toward said second annular groove. Skinner discloses that said drive shaft has a variable diameter between said grooves and that each of said first and said second annular grooves includes a bottom and parallel sides (see 26 in Fig. 1). Skinner discloses that one of said sides of said first and second annular grooves extend perpendicularly to said longitudinal axis from said bottom thereof to said variable diameter and the other side of the first annular groove intersects with said conical ramp (see 26 in Fig. 1). Skinner further discloses that said swash plate assembly includes a resilient member 107 disposed annularly about said drive shaft and between said swash plate assembly 50 and said retainer ring to provide a biasing force against said retainer ring (see col. 3, lines 56-61). However, Skinner does not teach that the retainer ring abuts against one of the sides facing the swash plate assembly.

Ota teaches a compressor assembly comprising a drive shaft 8, a retainer ring 16, and a swash plate assembly (see 12). Ota further teaches that the retainer ring resides in a groove (see configuration of 16 in Fig. 1) and abuts against a side of the groove perpendicular to a longitudinal axis of the drive shaft 8, which faces the swash plate assembly (see Fig. 1). Ota further teaches that the swash plate assembly includes a resilient member 15 disposed annularly about said drive shaft 8 and between said swash plate assembly and said retainer ring 16 to provide a biasing force against said retainer ring (see col. 4, lines 38-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the drive shaft apparatus of Skinner, by

Art Unit: 3746

using the side facing the swash plate assembly in the first annular groove to abut against the retainer ring in order to control the position of the swash plate (Ota, col. 4, lines 38-43).

Response to Arguments

4. Applicant's arguments filed 8/2/2007 have been fully considered but they are not persuasive.

5. In response to Applicant's arguments in reference to newly amended claim 1: Applicant argues that Skinner does not disclose a smooth and continuous conical ramp for facilitating movement of the retainer ring out of the first groove along the shaft. Regardless of whether Applicant agrees that Skinner reads on it or not, amended claim 1 does not state that the ramp is "smooth and continuous" as argued. Furthermore, just because the particular ring disposed in the first groove in Skinner is not structured to move, does not mean that the conical ramp in Skinner is not capable of facilitating movement out of the groove. Examiner maintains that the conical ramp in Skinner is indeed capable of facilitating the movement of a retainer ring out of the first groove along the shaft. Therefore, previously cited prior art still reads on the claims.


Conclusion

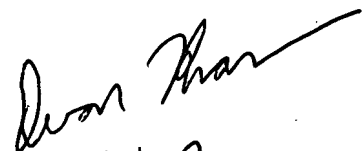
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

Art Unit: 3746

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571) 272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


PJB 10/1/07


10/4/07